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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/778,027	02/17/2004	Michel Belanger	564-B01-1.US	6183

7590 07/13/2005

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EXAMINER	
SUN, XIUQIN	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/778,027	BELANGER, MICHEL	
	Examiner	Art Unit	
	Xiuqin Sun	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10-13,17-19 and 22* is/are rejected.

7)☒ Claim(s) *5-9,14-16,20 and 21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *17 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *02/17/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-4, 10-13, 17-19 and 22 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4, 10-12 and 16-19 of prior U.S. Patent No. 6,779,385 B2, and in view of Georges et al. (U.S. Pat. No. 6906630).

Below is table of comparison between claims in cases involved in this double patenting rejection:

Table 1

#10/778027 claims	US 6,779,385 B2 claims
1. A device for monitoring moisture content level of a solid dielectric material inside an enclosure and a corresponding bubble formation temperature within the enclosure, said solid dielectric material being immersed in a dielectric fluid, said dielectric fluid filling said enclosure, said solid dielectric material and said dielectric fluid having a respective moisture content, said solid dielectric material and said dielectric fluid having known water solubility properties varying with temperature thereof, said dielectric fluid having a gas content level thereof, said enclosure having pressure related data thereof, said device comprising: a moisture measuring means for measuring moisture content level of said dielectric fluid; a temperature measuring means for measuring temperature level of said dielectric fluid; and an electronic circuit means for computing said moisture content level of said solid dielectric material and said corresponding bubble formation temperature, said electronic circuit means being electrically connected to both said moisture measuring means and said temperature measuring means, said electronic circuit means having said known water solubility properties of said solid dielectric material and said dielectric fluid stored therein, said electronic circuit means processing said fluid moisture content level and said fluid temperature level so as to determine said solid dielectric material moisture content level and said bubble formation temperature using said solid dielectric material moisture	1. A device for monitoring moisture content level of a solid dielectric material inside an enclosure, said solid dielectric material being immersed in a dielectric fluid, said dielectric fluid filling said enclosure, said solid dielectric material and said dielectric fluid having a respective moisture content, said solid dielectric material and said dielectric fluid having known water solubility properties varying with temperature thereof, said device comprising: a moisture measuring means for measuring moisture content level of said dielectric fluid; a temperature measuring means for measuring temperature level of said dielectric fluid; and an electronic circuit means for computing said moisture content level of said solid dielectric material, said electronic circuit means being electrically connected to both said moisture measuring means and said temperature measuring means, said electronic circuit means having said known water solubility properties of said solid dielectric material and said dielectric fluid stored therein, said electronic circuit means processing said fluid moisture content level and said fluid temperature level so as to determine said solid dielectric material moisture content level.

content level, the dielectric fluid gas content level and the enclosure pressure related data.	
2. The device of claim 1, wherein said electronic circuit means includes a displaying means for displaying said solid dielectric material moisture content level and said corresponding bubble formation temperature, said displaying means being electrically connected to said electronic circuit means.	2. The device of claim 1, wherein said electronic circuit means includes a displaying means for displaying said solid dielectric material moisture content level, said displaying means being electrically connected to said electronic circuit means.
3. The device of claim 1, including an operator interfacing means for an operator to interface with said electronic circuit means, said operator interfacing means being electrically connected to said electronic circuit means so as to allow said known water solubility properties of said solid dielectric material said dielectric fluid, the dielectric fluid gas content level and the enclosure pressure related data to be provided to and stored in said electronic circuit means.	3. The device of claim 1, including an operator interfacing means for an operator to interface with said electronic circuit means, said operator interfacing means being electrically connected to said electronic circuit means so as to allow said known water solubility properties of said solid dielectric material and said dielectric fluid to be provided to and stored in said electronic circuit means.
4. The device of claim 1, wherein said electronic circuit means is remotely electrically connected to both said moisture measuring means and said temperature measuring means so as to allow said moisture measuring means and said temperature measuring means to be located in a generally inaccessible location.	4. The device of claim 1, wherein said electronic circuit means is remotely electrically connected to both said moisture measuring means and said temperature measuring means so as to allow said moisture measuring means and said temperature measuring means to be located in a generally inaccessible location.
5. The device of claim 1, including an operator interfacing means for an operator to interface with said electronic circuit means, said operator interfacing means being electrically connected to said electronic circuit means, said electronic circuit means providing a sensor location menu through said operator interfacing means so as to allow an operator to select a specific location of both said moisture	5. The device of claim 1, including an operator interfacing means for an operator to interface with said electronic circuit means, said operator interfacing means being electrically connected to said electronic circuit means, said electronic circuit means providing a sensor location menu through said operator interfacing means so as to allow an operator to select a specific location of both said moisture

measuring means and said temperature measuring means within said enclosure, whereby said specific location affecting determination of said solid dielectric material moisture content level and said corresponding bubble formation temperature by said electronic circuit means.	measuring means and said temperature measuring means within said enclosure, whereby said specific location affecting determination of said solid dielectric material moisture content level by said electronic circuit means.
6. The device of claim 2, including: a second moisture measuring means for measuring second moisture content level of said dielectric fluid, said electronic circuit means comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level, said electronic circuit means displaying on said displaying means either a warning message when said relative difference is equal or larger than a predetermined value or said solid dielectric material moisture content level and said corresponding bubble formation temperature when said relative difference is smaller than said predetermined value; whereby said second moisture measuring means being a reference moisture measuring means to enable detection of malfunction of said device.	6. The device of claim 2, including: a second moisture measuring means for measuring second moisture content level of said dielectric fluid, said electronic circuit means comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level, said electronic circuit means displaying on said displaying means either a warning message when said relative difference is equal or larger than a predetermined value or said first solid dielectric material moisture content level when said relative difference is smaller than said predetermined value; whereby said second moisture measuring means being a reference moisture measuring means to enable detection of malfunction of said device.
7. The device of claim 2, including: a second temperature measuring means for measuring second moisture temperature level of said dielectric fluid, said electronic circuit means processing said first and second fluid temperature levels and said fluid moisture content level so as to determine first and second solid dielectric material moisture content levels respectively, said electronic circuit means displaying on said displaying means an average of said first and second solid dielectric material moisture content levels and said corresponding bubble formation temperature.	

8. The device of claim 7; wherein said first and second temperature measuring means are located adjacent bottom and top regions of the enclosure, respectively.	
9. The device of claim 2, including: a second moisture measuring means for measuring second moisture content level of said dielectric fluid, said electronic circuit means comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level, said electronic circuit means processing said first and second fluid moisture content levels and said fluid temperature level so as to determine first and second solid dielectric material moisture content levels respectively, said electronic circuit means displaying on said displaying means either a warning message when said relative difference is equal or larger than a predetermined value or an average of said first and second solid dielectric material moisture content levels and said corresponding bubble formation temperature when said relative difference is smaller than said predetermined value; whereby said second moisture measuring means being at least a reference moisture measuring means to enable detection of malfunction of said device.	
10. The device of claim 1, wherein the pressure related data includes a pressure level within the enclosure, and wherein said device further includes a pressure measuring means for measuring pressure level within the enclosure, said electronic circuit means being electrically connected to said pressure measuring means.	

11. A method for monitoring moisture content level of a solid dielectric material inside an enclosure and a corresponding bubble formation temperature within the enclosure, said solid dielectric material being immersed in a dielectric fluid, said dielectric fluid filling said enclosure, said solid dielectric material and said dielectric fluid having a respective moisture content, said solid dielectric material and said dielectric fluid having known water' solubility properties varying with temperature thereof, said dielectric fluid having a gas content level thereof, said enclosure having pressure related data thereof, said method comprising the following steps: a) measuring moisture content level of said dielectric fluid using a moisture detector; b) measuring temperature level of said dielectric fluid using a temperature detector; and c) computing said solid dielectric material moisture content level and said corresponding bubble formation temperature using a processor electronic circuit, said electronic circuit being electrically connected to both said moisture detector and said temperature detector, said electronic circuit having said known water solubility properties of said solid dielectric material and said dielectric fluid stored therein, said electronic circuit processing said fluid moisture content level and said fluid temperature level so as to determine said solid dielectric material moisture content level and said bubble formation temperature using said solid dielectric material moisture content level, the dielectric fluid gas content level and the enclosure pressure related data.	10. A method for monitoring moisture content level of a solid dielectric material inside an enclosure, said solid dielectric material being immersed in a dielectric fluid, said dielectric fluid filling said enclosure, said solid dielectric material and said dielectric fluid having a respective moisture content, said solid dielectric material and said dielectric fluid having known water solubility properties varying with temperature thereof, said method comprising the following steps: a) measuring moisture content level of said dielectric fluid using a moisture detector; b) measuring temperature level of said dielectric fluid using a temperature detector; and c) computing said solid dielectric material moisture content level using a processor electronic circuit, said electronic circuit being electrically connected to both said moisture detector and said temperature detector, said electronic circuit having said known water solubility properties of said solid dielectric material and said dielectric fluid stored therein, said electronic circuit processing said fluid moisture content level and said fluid temperature level so as to determine said solid dielectric material moisture content level.
12. The method recited in claim 11, including the step of: d) displaying said solid dielectric material	11. The method recited in claim 10, including the step of: d) displaying said solid dielectric material

moisture level and said corresponding bubble formation temperature using a display, said display being electrically connected to said electronic circuit to receive said- solid dielectric material moisture content level and said corresponding bubble formation temperature therefrom.	moisture level using a display, said display being electrically connected to said electronic circuit to receive said solid dielectric material moisture content level therefrom.
13. The method recited in claim 12, wherein said display is remotely electrically connected to said electronic circuit.	12. The method recited in claim 11, wherein said display is remotely electrically connected to said electronic circuit.
14. The method recited in claim 12, wherein step a) includes measuring a second moisture content level of said dielectric fluid using a second moisture detector; step c) includes said electronic circuit comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level; and step d) includes displaying on said display either a warning message when said relative difference is equal or larger than a predetermined value or said solid dielectric material moisture content level and said corresponding bubble formation temperature when said relative difference is smaller than said predetermined value; whereby said second moisture detector being a reference moisture detector to enable detection of malfunction of said first moisture detector.	13. The method recited in claim 11, wherein step a) includes measuring a second moisture content level of said dielectric fluid using a second moisture detector; step c) includes said electronic circuit comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level; and step d) includes displaying on said display either a warning message when said relative difference is equal or larger than a predetermined value or said first solid dielectric material moisture content level when said relative difference is smaller than said predetermined value; whereby said second moisture detector being a reference moisture detector to enable detection of malfunction of said device.
15. The method recited in claim 12, wherein step b) includes measuring a second moisture content level of said dielectric fluid using a second moisture detector; step c) includes said electronic circuit processing said first and second fluid temperature levels and said fluid moisture content level so as to determine first and second solid dielectric material moisture content levels respectively; and step d) includes displaying on said	

display an average of said first and second solid dielectric material moisture content levels and said corresponding bubble formation temperature.	
16. The method recited in claim 15, wherein said first and second temperature detectors are located adjacent bottom and top regions of the enclosure, respectively.	
17. The method recited in claim 11, including the step of: d) sending said solid dielectric material moisture content level and said corresponding bubble formation temperature to a remote unit so as to allow post-processing thereof, said remote unit being electrically connected to said electronic circuit.	16. The method recited in claim 10, including the step of: d) sending said solid dielectric material moisture content level to a remote unit so as to allow post-processing thereof, said remote unit being electrically connected to said electronic circuit.
18. The method recited in claim 11, including after step b) the step of: b1) providing an operator interface so as to allow said known water solubility properties of said solid dielectric material and said dielectric fluid, the dielectric fluid gas content level and the enclosure pressure related data to be provided therethrough; said operator interface being electrically connected to an electronic circuit for an operator to interface therewith and store said known water solubility properties of said solid dielectric material and said dielectric fluid, the dielectric fluid gas content level and the enclosure pressure related data therein.	17. The method recited in claim 10, including after step b) the step of: b1) providing an operator interface so as to allow said known water solubility properties of said solid dielectric material and said dielectric fluid to be provided therethrough; said operator interface being electrically connected to an electronic circuit for an operator to interface therewith and store said known water solubility properties of said solid dielectric material and said dielectric fluid therein.
19. The method recited in claim 18, wherein said operator interface is remotely electrically connected to said electronic circuit.	18. The method recited in claim 17, wherein said operator interface is remotely electrically connected to said electronic circuit.
20. The method recited in claim 11, including after step b) the step of: b1) providing an operator interface	19. The method recited in claim 10, including after step b) the step of: b1) providing an operator interface

electrically connected to an electronic circuit for an operator to interface therewith, said electronic circuit providing a detector location menu through said operator interface so as to allow an operator to select a specific location of both said moisture detector and said temperature detector within said enclosure, whereby said specific location affecting determination of said solid dielectric material moisture content level and said corresponding bubble formation temperature by said electronic circuit.	electrically connected to an electronic circuit for an operator to interface therewith, said electronic circuit providing a detector location menu through said operator interface so as to allow an operator to select a specific location of both said moisture detector and said temperature detector, within said enclosure, whereby said specific location affecting determination of said solid dielectric material moisture content level by said electronic circuit.
21. The method recited in claim 12, wherein step a) includes measuring a second moisture content level of said dielectric fluid using a second moisture detector; step c) includes said electronic circuit comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level, said electronic circuit processing said first and second fluid moisture content levels and said fluid temperature level so as to determine first and second solid dielectric material moisture content levels respectively; and step d) includes displaying on said display either a warning message when said relative difference is equal or an average of said first and second solid dielectric material moisture content levels and said corresponding bubble formation temperature when said relative difference is smaller than said predetermined value; whereby said second moisture detector being at least a reference moisture detector to enable detection of malfunction of said first moisture detector.	
22. The method recited in claim 11, wherein	

the pressure related data includes a pressure level within the enclosure, and wherein step a) includes measuring a pressure level of the enclosure using a pressure sensor; step c) includes said electronic circuit being electrically connected to said pressure sensor.	

Table 1 shown above lists the literal difference as underlined between the claims 1-3, 11-12 and 17-18 in the instant application ('027) and the claims 1-3, 10-11 and 16-17 in the prior art US6779385 B2 ('385). The conflicting claims are not patentably distinct from each other because they are just obvious variants of each other, except the limitations discussed as follows.

'027 recites: regarding claims 1 and 11, said dielectric fluid having a gas content level thereof, said enclosure having pressure related data; determining said bubble formation temperature using said solid dielectric material moisture content level, the dielectric fluid gas content level and the enclosure pressure related data; regarding claims 2 and 12, displaying said corresponding bubble formation temperature together with said solid dielectric material moisture content level; regarding claims 3 and 18, said operator interfacing means allows said dielectric fluid gas content level and the enclosure pressure related data to be provided to and stored in said electronic circuit means; regarding claims 10 and 22, the pressure related data includes a pressure level within the enclosure, and wherein said device further includes a pressure measuring means for measuring pressure level within the enclosure, said electronic circuit means being electrically connected to said pressure measuring means; regarding claim

17, sending said solid dielectric material moisture content level and said corresponding bubble formation temperature to a remote unit so as to allow post-processing thereof, said remote unit being electrically connected to said electronic circuit.

Claims 1-3, 10-11 and 16-17 of '352 do not cover these features.

As to claims 1 and 11, Georges et al. teach a transformer with dielectric fluid inside it (col. 3, lines 2-9 and lines 58-60), said dielectric fluid having a gas content level thereof (col. 6, lines 55-58), said transformer having pressure related data (cols. 5-6, lines 66-2); step and means of calculating solid dielectric material moisture content level (cols. 13-14, lines 58-17); step and means of determining a bubble formation temperature using said solid dielectric material moisture content level, the dielectric fluid gas content level and the transformer pressure related data (col. 14, lines 18-41).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Georges et al. into '352 in order to sense various physical quantities associated with the operation of a transformer, and uses the sensed physical quantities to calculate values for monitoring the behavior of the transformer (Georges et al., Abstract).

As to claims 2, 3, 10, 12, 17, 18 and 22, the teaching of Georges et al. further includes: displaying said corresponding bubble formation temperature (col. 13, lines 29-34); said operator interfacing means allows said dielectric fluid gas content level and the enclosure pressure related data to be provided to and stored in said electronic circuit means (col. 20, lines 44-67); the pressure related

data includes a pressure level within the enclosure, and wherein said device further includes a pressure measuring means for measuring pressure level within the enclosure, said electronic circuit means being electrically connected to said pressure measuring means (cols. 5-6, lines 66-8); sending said solid dielectric material moisture content level and said corresponding bubble formation temperature to a remote unit so as to allow post-processing thereof, said remote unit being electrically connected to said electronic circuit (col. 2, lines 57-63).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Georges et al. into '352 in order to facilitate the measurement, calculation and usage of various physical quantities associated with the operation of a transformer (Georges et al., col. 2, lines 42-63 and col. 20, lines 44-67).

Allowable Subject Matter

3. Claims 5-9, 14-16, 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Reasons for Allowance

4. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claims 5 and 20 is the inclusion of an operator interfacing step and means for an operator to interface with said electronic circuit means, said operator interfacing means being electrically

connected to said electronic circuit means, said electronic circuit means providing a sensor location menu through said operator interfacing means so as to allow an operator to select a specific location of both said moisture measuring means and said temperature measuring means within said enclosure, whereby said specific location affecting determination of said solid dielectric material moisture content level and said corresponding bubble formation temperature by said electronic circuit means. It is these limitations found in each of the claims, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make these claims allowable over the prior art.

The primary reason for the allowance of claim 6 is the inclusion of a second moisture measuring means for measuring second moisture content level of said dielectric fluid, said electronic circuit means comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level, said electronic circuit means displaying on said displaying means either a warning message when said relative difference is equal or larger than a predetermined value or said solid dielectric material moisture content level and said corresponding bubble formation temperature when said relative difference is smaller than said predetermined value; whereby said second moisture measuring means being a reference moisture measuring means to enable detection of malfunction of said device. It is these limitations found in the claim, as they are

claimed in the combination that have not been found, taught or suggested by the prior art of record, which make this claim allowable over the prior art.

The primary reason for the allowance of claims 7 and 8 is the inclusion of the limitation of a second temperature measuring means for measuring second moisture temperature level of said dielectric fluid, said electronic circuit means processing said first and second fluid temperature levels and said fluid moisture content level so as to determine first and second solid dielectric material moisture content levels respectively, said electronic circuit means displaying on said displaying means an average of said first and second solid dielectric material moisture content levels and said corresponding bubble formation temperature. It is these limitations found in each of the claims, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make these claims allowable over the prior art.

The primary reason for the allowance of claim 9 is the inclusion of the limitation of a second moisture measuring means for measuring second moisture content level of said dielectric fluid, said electronic circuit means comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level, said electronic circuit means processing said first and second fluid moisture content levels and said fluid temperature level so as to determine first and second solid dielectric material moisture content levels respectively, said electronic circuit means displaying on said displaying means either a warning message when said relative difference is equal or larger than a predetermined

value or an average of said first and second solid dielectric material moisture content levels and said corresponding bubble formation temperature when said relative difference is smaller than said predetermined value; whereby said second moisture measuring means being at least a reference moisture measuring means to enable detection of malfunction of said device. It is these limitations found in the claim, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make this claim allowable over the prior art.

The primary reason for the allowance of claim 14 is the inclusion of the limitation that step a) includes measuring a second moisture content level of said dielectric fluid using a second moisture detector; step c) includes said electronic circuit comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level; and step d) includes displaying on said display either a warning message when said relative difference is equal or larger than a predetermined value or said solid dielectric material moisture content level and said corresponding bubble formation temperature when said relative difference is smaller than said predetermined value; whereby said second moisture detector being a reference moisture detector to enable detection of malfunction of said first moisture detector. It is these limitations found in the claim, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make this claim allowable over the prior art.

The primary reason for the allowance of claims 15 and 16 is the inclusion of the limitation that step b) includes measuring a second moisture content level of said dielectric fluid using a second moisture detector; step c) includes said electronic circuit processing said first and second fluid temperature levels and said fluid moisture content level so as to determine first and second solid dielectric material moisture content levels respectively; and step d) includes displaying on said display an average of said first and second solid dielectric material moisture content levels and said corresponding bubble formation temperature. It is these limitations found in each of the claims, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make these claims allowable over the prior art.

The primary reason for the allowance of claim 21 is the inclusion of the limitations of measuring a second moisture content level of said dielectric fluid using a second moisture detector; comparing said first and second dielectric fluid moisture content levels and calculating a relative difference therebetween relative to said first dielectric fluid moisture content level, said electronic circuit processing said first and second fluid moisture content levels and said fluid temperature level so as to determine first and second solid dielectric material moisture content levels respectively; and displaying on said display either a warning message when said relative difference is equal or an average of said first and second solid dielectric material moisture content levels and said corresponding bubble formation temperature when said relative difference is smaller than said predetermined value; whereby said second moisture detector

being at least a reference moisture detector to enable detection of malfunction of said first moisture detector. It is these limitations found in the claim, as they are claimed in the combination that have not been found, taught or suggested by the prior art of record, which make this claim allowable over the prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Prior Art Citations

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1) Hancock (U.S. Pat. No. 4484822) is entitled "Method and apparatus for determining boiling points of liquids".

Contact Information

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xiuqin Sun whose telephone number is (571)272-2280. The examiner can normally be reached on 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571)272-2269. The fax

phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Xiuqin Sun
Examiner
Art Unit 2863

XS
July 8, 2005

John Barlow
Supervisory Patent Examiner
Technology Center 2800